

Local Hazard Mitigation Plan ANNEX

Zone 7 Water Agency

Introduction

Zone 7 Water Agency (Zone 7) is one of the 10 active zones of the Alameda County Flood Control and Water Conservation District (ACFC&WCD). The District was established in 1949 by the Alameda County Flood Control and Water Conservation District ACT. In the late 1940's Livermore-Amador Valley was mostly rural and faced a number of problems, including groundwater, overdraft, poor drainage and flood hazards and uncertainty over the status of future water supplies. To help solve these problems, in 1957 the voters of eastern Alameda County approved the creation of the Zone 7 Water Agency to address their specific issues. Zone 7 is considered a department within ACFC&WCD. In 2004, Zone 7's operating budget was \$32.6 Million and Zone 7 Water Agency employs approximately 108.8 employees.

Zone 7 Water Agency, is responsible for wholesaling treated and untreated water supply, managing the ground water basins and providing flood control to the Livermore-Amador Valley. We sell water to local retailers who in turn provide it to the citizens of the community, as well as distribute untreated water for our local industry and agriculture for irrigation to the farmers, golf courses and others in the Livermore-Amador Valley. Some of the major retail water agencies contracting with Zone 7 for treated water include; The City of Pleasanton, The City of Livermore, Dublin San Ramon Services District and the California Water Service Company.

Zone 7 Water Agency is one of 29 State Water contractors and provides 10-20% non-potable deliveries to Livermore's agriculture. We have 80, 619 acre-feet per year of sustainable water supply. Water for the Livermore-Amador Valley, currently comes from three primary sources; local groundwater; local runoff from the Arroyo del Valle; and imported surface water from the State Water Project (SWP). We hold the water rights from flows in the Arroyo del Valle and the local runoff from the Arroyo del Valle is captured in Lake Del Valle, under agreements with the State Department of Water Resources. This runoff is either treated and used directly, or recharged into the groundwater basin for later recovery.

Today, Zone 7 serves a population of more than 183,000 in a service area comprised of approximately 430 square miles in the eastern section of Alameda County and includes Pleasanton, Livermore and Dublin as well as the surrounding unincorporated Alameda County lands. Of Alameda County's 10 active zones, Zone 7 is responsible for some 35 linear miles of pipeline and 41 linear miles of flood control channels and drainage facilities. These channels consist primarily of enlarged natural channels or excavated new channels. Some channels have enhanced landscaping and trails which are open to the public.

Zone 7 is committed to providing a reliable supply of high-quality drinking water and an effective flood control system to the Livermore-Amador Valley. In fulfilling our present and future commitments to the community, we will develop and manage the water resources in a fiscally responsible, innovative, proactive, and environmentally responsible way.

The Planning Process

The process of preparing this plan was familiar to the Zone 7. Zone 7 routinely complies with the requirements of the California Environmental Quality Act (CEQA) requirements (which, since 1988, have required mitigation for identified natural hazards). The agency's effort has focused on building on these pre-existing programs and identifying gaps that may lead to disaster vulnerabilities in order to work on ways to address these risks through mitigation.

At the first meeting general priorities and appropriate key personnel were identified. The agency has participated in The Association of Bay Area Governments (ABAG) Multi-jurisdictional Hazard Plan to review hazards such as fires, earthquakes, dam failure, liquefaction, flooding, hazardous materials, drought and landside hazards.

Many of the activities conducted by Zone 7 were fed into the planning process for the multi-jurisdictional plan. Zone 7 participated in various ABAG workshops and meetings, including the general "Kick-off" and the "Soft-story Charrette" meetings. In addition, Zone 7 has provided ABAG written and oral comments on the multi-jurisdictional plan.

We have participated in the planning and setting goals process with Alameda County Local Hazard Mitigation Plan committee. Key representative from Zone 7 attended bi-weekly meetings in August, September and October 2004. The committee members are comprised of various departments within Alameda County. The committee addressed the hazards and set the criteria on how to proceed with the County Plan. Also, in September, 2004 the committee met and there was discussion on Flood issues, underground infrastructures, online risk assessment for infrastructure systems and critical facilities. Once the lists of critical facilities were identified, Zone 7 provided the list to ABAG. All information provided to ABAG was input into a database for future use.

Zone 7 has addressed the public by providing information on the Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) at our November, 2004 board meeting.

In March, 2005 we participated in the Livermore-Pleasanton Fire Department mitigation meeting with representatives from Livermore-Pleasanton Fire Department, City of Pleasanton, City of Livermore, City of Livermore Planning Department, Livermore Valley Joint Unified School District and Pleasanton Unified School District. The purpose of the meeting was to review the strategies on all hazards in Livermore and Pleasanton to ensure all agencies had addressed all hazards.

Representatives from Alameda County Flood Control and Water Conservation District, Public Works Department and representatives from Zone 7 met to review the mitigation strategies, to determine the hazards, to ensure they weren't overlapping in the prioritization of the criteria set and to discuss estimated costs. The meeting was concluded and all parties agreed to the new revised mitigation strategies.

On more than one occasion appointed LHMP Zone 7 staff met to identify and prioritize the mitigation strategies appropriate for ACFC&WCD, Zone 7. In April, 2005 appointed staff met with other management staff to review the mitigation strategies; approved the list of hazards and funding. This meeting defined the priorities to be used for the strategies and Zone 7 evaluated current and future

programs. The criteria for evaluating our priorities were setup by ABAG. The information was fed into a data base and assisted Zone 7 by prioritizing the under-funded projects. Many of the activities we fed into the Multi-jurisdictional plan.

Zone 7 provided the opportunity for the public to comment on the DRAFT mitigation strategies selected by agency staff at the General Board meeting on November, 2004. On November 16, 2005, Zone 7 board members adopted the LHMP resolution adopting the plan. The mitigation strategies will become an implementation appendix to this Annex

Hazard and Risk Assessment

Zone 7 Water Agency hazards and risks are generally consistent with those identified in the ABAG Multi-jurisdictional Hazard Mitigation Plan, to which this is an Annex, except as described below.

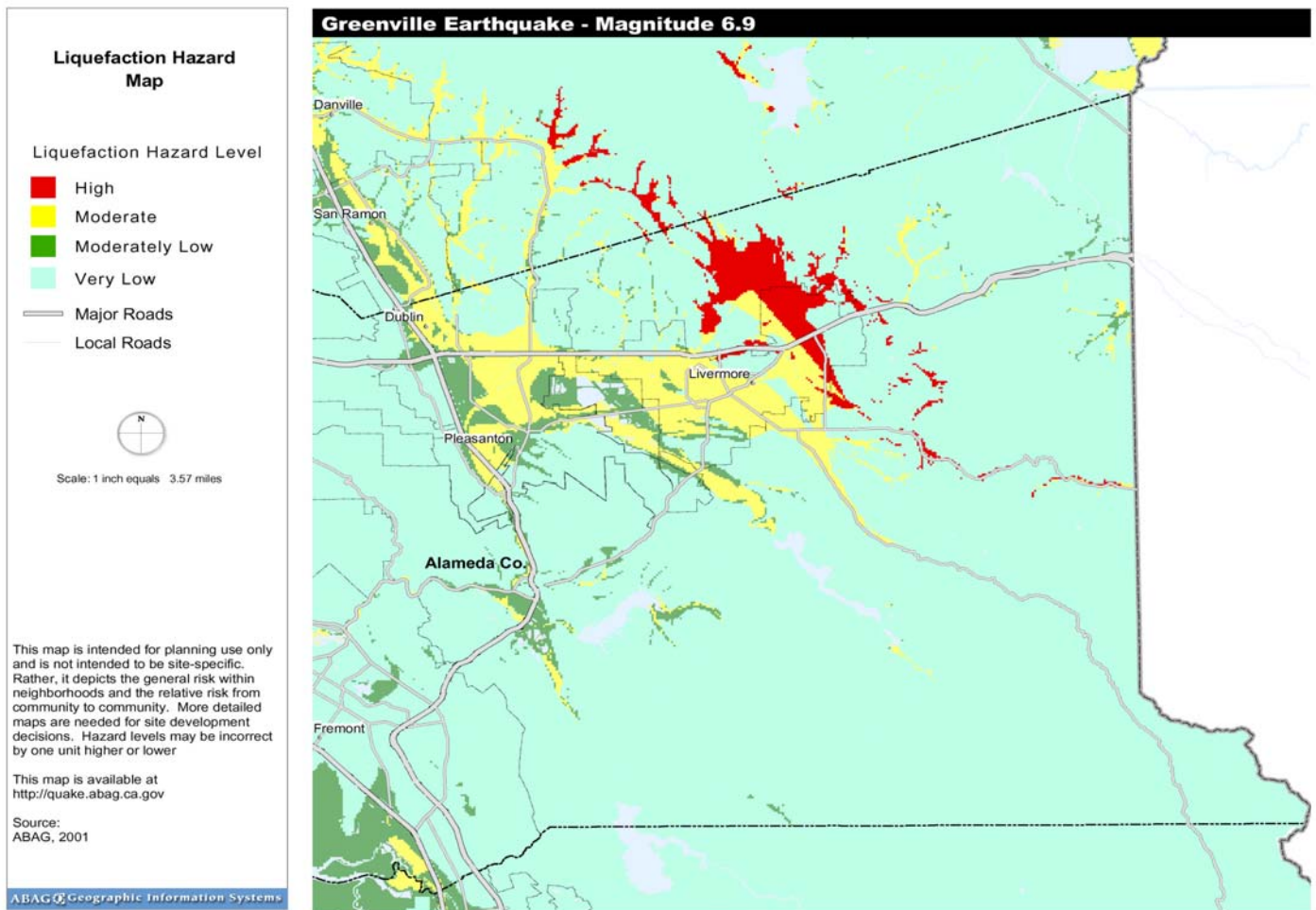
The multi-jurisdictional plan did not include specifics on water treatment and distribution facilities. Specific water contamination, water distribution, water supply and water source issues were not addressed. A discussion of these issues and hazards can be found below in related studies.

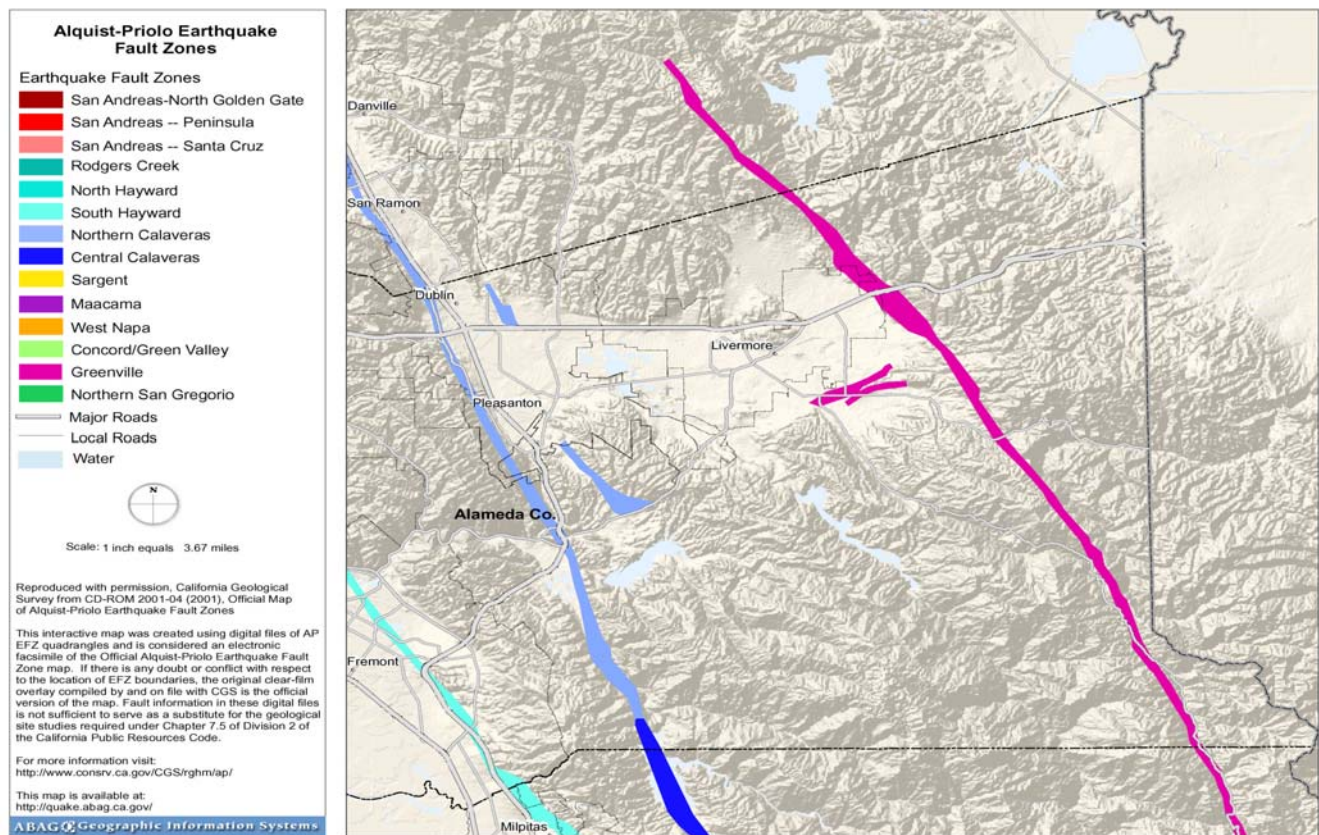
The information shown on the ABAG website includes Zone 7 in greater Alameda County. Our services cover unincorporated Alameda County within the Zone 7 boundary and the Cities of Pleasanton, Livermore and Dublin.

Finally, Zone 7 examined the hazard exposure of critical health care facilities, schools, and city-owned buildings based on the information on ABAG's website at <http://quake.abag.ca.gov/mitigation/pickcrit.html>.

Of the 31 critical facilities owned by Zone 7,

- ◆ No critical facilities are in an Alquist-Priolo Fault Rupture Study Zone, however, major water supply lines (Livermore, Vineyard, Mocho 1, and Cross Valley) cross the Livermore, Calaveras and Greenville faults;
- ◆ 11 critical facilities are in the highest two categories of shaking potential;
- ◆ 11 critical facilities are in areas of moderate, high, or very high liquefaction susceptibility mapped by the U.S. Geological Survey;
- ◆ All critical facilities are in areas where mapping by the Seismic Hazard Mapping Program of the California Geological Survey has not been completed, the hazards shown on these maps, when completed, are likely to be consistent with the USGS liquefaction map and existing landslide map;
- ◆ Only one critical facility (a ground water well) is in the 100-year flood plain, while 13 facilities are in other flood-prone areas;
- ◆ 17 critical facilities are subject to dam inundation;
- ◆ No critical facilities are in areas of existing landslides; and
- ◆ 18 critical facilities are subject to high wildfire threat, and 9 critical facilities are in wildland-urban interface threat areas.





The above schematic highlights faults in Zone 7's service area.

Drought, though a potential problem for Zone 7 operations, is not fully assessed as part of the Multi-jurisdictional Hazard Mitigation Plan Annex. Zone 7 will be working with ABAG and other water supply agencies on this issue and Zone 7 will update its drought mitigation plans as appropriate as part of the required Urban Water Management Plan that is to be completed by end of 2005.

The disaster history of our area is included in the ABAG website for Alameda County at <http://quake.abag.ca.gov/mitigation/disaster-history.html>. Within the Alameda County area, Zone 7 location there have been 2 claims for \$10,000 of repetitive loss properties from floods within the FEMA 100-year boundary based on the information at <http://quake.abag.ca.gov/mitigation/pickflood.html>. Zone 7 has experienced some disaster mitigation from channel slope failures caused by extreme rainfall. We have also experienced damage from an earthquake on the Greenville Fault.

Zone 7's disaster response method is to be pro-active in reducing potential damages, as opposed to addressing damages by disaster for example earthquake, bomb or flood. The concept is to address the damage, not how the damage occurred. To delineate where potential damages might occur we reviewed the various regional hazard maps found at the ABAG website at <http://quake.abag.ca.gov/mitigation/>. <http://www.abag.ca.gov/cgi-bin/pickmapx.pl>, Loma Prieta map.

Studies and Reports specific to Zone 7 are:

Water System Reliability Assessment (July 1994) – This report provides an assessment of how the Zone 7 Water System may respond under various earthquake conditions, including earthquake induced power outages and fires. The report examined 10 different scenarios of earthquakes. Each scenario was associated with a particular fault and magnitude. The assessment provided information useful for determining system upgrades strategies and priorities. The report generated 59 recommended facility upgrades.

Emergency Operations Plan (EOP) (December 1995) – The EOP was comprised of three major parts: Part I the Basic plan; Part II Standardized Emergency Management System (SEMS); and Part III Contingency Plans. The Basic Plan outlines the Agency's overall emergency management program, including its system of operations during disasters. SEMS addresses emergency management functions from an operational perspective, and the Contingency Plans outline additional actions to be taken for specific events.

Seismic Upgrade Project (May 1996) – This project addressed many recommended upgrades from the 1994 Water System Reliability Assessment report. Budgetary constraints dictated a prioritization process be followed to abate potential damages.

Vulnerability Assessment Study (March 2003) –The purpose of the Vulnerability Assessment was to make a thorough assessment of its water delivery goals, and then its facilities, operations and practices to determine what events that could cause the Agency to be unable to meet its goals. The final part of the assessment was to create recommendations, the purpose to either prevent specific, defined threats, or mitigate their results, so that the risk associated with those events are acceptable to the Agency. Critical facilities were evaluated and ranked in their ability to provide water throughout our system. Threat Assessments were created based on multiple scenarios. Security professionals evaluated our facilities and made recommendations for improvement and for future protection.

Streams Management Master Plan SMMP (2004) – Is a multi-disciplinary approach to stream management in the Zone 7 area, Flood Protection and Drainage, Erosion and Sedimentation, Water Supply, Water Quality Habitat & Environment and Recreation, Trails & Education were addressed. Channels were evaluated based on hydraulic properties and prioritized for which areas needed to be improved first and what method of improvement that would span the range of disciplines being addressed. The alternatives ranged from storage options to creating by-passes. This project involved a variety of public workshops to draw together all interested stakeholders to participate in the process. There is a draft EIR being prepared and along with funding evaluations. The scheduled completion date is 2007. The next challenge will be acquiring the funding to complete the recommended projects.

EOP Update (August 2004) - The purpose of the EOP is to provide a framework, organizational structure and general direction for Zone 7 response to both local and regional emergencies. Similar to the 95 EOP, the EOP is comprised of three major parts. Part I – Emergency Operations overview, Part II –SEMS, and Part III-Emergency Contingency Plans. The contingency plans were enhanced to cover a terrorism element to disasters including crime scene preservation. This plan focused on damages and the impact.

Final Draft Asset Management Program (October 2004) - This report presented findings, conclusions and recommendations of the Asset Management Program (AMP). The work included assessment of assets at the Del Valle Water Treatment Plant (DVWTP), Patterson Pass (PPWTP), distribution system, wells, and storage facilities owned and operated by ACFC&WCD, Zone 7. Objectives included condition assessment of each key water treatment and distribution assets. A project list for Renewal and Replacement (R&R) based on priority of need/age risk for inclusion in the FY 2005/2006 ten-year Capital Improvement Projects. Finally, confirmation that the annual R&R and System-Wide Improvement (SWI) project allowance and the funding strategies are sufficient for the predicted future R&R and SWI expenditures.

Emergency Generator (June 2004) – The purpose of the study was to identify emergency power requirements for Zone 7 water production facilities. The specific objectives were to provide 100 % of maximum daily water demands for short duration power outages and to provide 75% of maximum daily demands during significant power outages. The study encompassed existing conditions and projected needs and uses to 2007.

Joint Exercise of Powers Agreement (JEPA) - The development, monitoring, and implementation of aquatic pesticides NPDES (National Pollution Discharge Elimination System) Permit. Zone 7 along with Contra Costa County, Contra Costa County Flood Control and water Conservation District, ACFC&WCD, City of Antioch and the City of Concord worked together to request a permit to apply aquatic pesticides to control undesirable vegetation in channels. Undesirable vegetation must be controlled to maintain design flow capacities, reduce silt deposition and reduce erosion damages to the embankments of channels.

Alameda Countywide Clean Water Program, Storm water Quality Management Plan Fiscal years 2001/02 thru 2007/08 – Alameda County Clean Water Program is a consortium of agencies within Alameda County that discharge storm water to the San Francisco Bay. The Storm water Management Plan describes the program's approach to reducing storm water pollution. The techniques used include Performance Standards of Public Information, Municipal Maintenance, New Development and Construction Site controls, and Illicit Discharge Controls. This program has impacts concerning water flows (Hydro Modification) from new development, bank erosion as it relates to soil as a pollutant and promotes public education through newsletters and school participation programs. Ultimately addressing these standards relating to pollution control provides the benefit of reducing damage related to flooding.

As these impacts are not fully developed, Zone 7 has reviewed the hazards identified and ranked the hazards based on past disasters and expected future impacts. The conclusion is that earthquakes (particularly shaking), landslides (including unstable earth) and flooding pose a significant risk for potential loss. Zone 7 Water Agency plans to work with ABAG during 2005 to improve the risk assessment information being compiled by ABAG by providing more information specific to the Zone 7 area of Alameda County.

Mitigation Activities and Priorities

As a participant in the ABAG multi-jurisdictional planning process, Zone 7 staff helped in the development and review of the comprehensive list of mitigation strategies in the overall multi-jurisdictional plan.

Many of the activities conducted by Zone 7 were fed into the Multi-jurisdictional Hazard Plan. In April, 2005 appointed key Emergency Safety Services staff met with Zone 7 department heads to review the mitigation strategies. Staff involved in this meeting included the Emergency Safety Supervisor, General Manager, Assistant General Manager, Budget Analyst, Staff Analyst, Water Systems Superintendent, Water Resources Engineer, Maintenance/Capital Projects Engineer, Emergency and Safety Section Engineer and support staff. At the meeting, all of the mitigation strategies were reviewed. The tentative decision on priority was made based on a variety of criteria and not simply on an economic cost-benefit analysis. These criteria include being technically and administratively feasible, politically acceptable, socially appropriate, legal, economically sound, and not harmful to the environment or our heritage.

Over time, we are committed to developing better hazard and risk information to use in making those trade-offs. We are not trying to create a disaster-proof region, but a disaster-resistant one. In addition, several of the strategies are existing Zone 7 programs.

The attached draft priorities were submitted to Zone 7 Water Agency General Manager for review. The draft priorities were then provided to Zone 7 Water Agency Board on November 16, 2005. The public was provided with an opportunity to comment on the DRAFT priorities. The final strategies (as shown in the attached Table) will become an Implementation Appendix to Zone 7 Water Agency's Annex.

Note: In the attached table the responsible entity is Zone 7 and is a department within the Alameda County Flood Control and Water District.

The Plan Update Process

Zone 7's Emergency and Safety Office will continue to monitor this Annex as necessary. The plan will be monitored on an on-going basis. However, the major disasters affecting our community, legal changes, notices from ABAG as the lead agency in this process, and other triggers will be used. Finally, the Annex will be a discussion item on the agenda of the meeting of appointed staff at least once a year in April. At that meeting, the appointed staff will focus on evaluating the Annex in light of technological and political changes during the past year or other significant events. This group will be responsible for determining if the plan should be updated.

Zone 7 is committed to reviewing and updating this plan annex at least once every five years, as required by the Disaster Mitigation Act of 2000. The Emergency and Safety Program Manager will contact ABAG four years after this plan is approved to ensure that ABAG plans to undertake the plan update process. If so, Zone 7 again plans to participate in the multi-jurisdictional plan. If ABAG is unwilling or unable to act as the lead agency in the multi-jurisdictional effort, other agencies will be

contacted, including the County's Office of Emergency Services. Counties should then work together to identify another regional forum for developing a multi-jurisdictional plan.

The public will continue to be notified of the opportunity to provide input whenever the plan is updated and as appropriate during the monitoring and evaluation process. Prior to adoption of updates, Zone 7 will provide the opportunity for the public to comment on the updates. A public notice will be posted prior to the meeting to announce the comment period and meeting logistics.